

REMARKS

Claims 2-5, 9-10 and 14-16 are pending. Favorable reconsideration is respectfully requested.

The present invention relates to a process for producing a purified resist polymer solution, comprising:

(1) dissolving a solid product comprising a resist polymer comprising a repeating unit decomposable by, and becoming alkali-soluble by, the action of an acid and a polar group-containing repeating unit, in a solvent having a boiling point at atmospheric pressure not higher than the boiling point of a solvent for coating-film formation, and

(2) evaporating from the solution obtained in (1) the solvent having a boiling point at atmospheric pressure not higher than the boiling point of the solvent for coating-film formation while adding, under reduced pressure with the temperature being controlled at 70°C or less, a solvent for coating-film formation to produce a purified resist polymer solution,

where the amount of impurities having a boiling point at atmospheric pressure of not more than the boiling point of the solvents for coating-film formation is 1 mass% or less of the resist polymer in the purified resist polymer solution.

See Claim 14.

Thus, in the claimed process, the solid product comprising the resist polymer is dissolved in the solvent having a boiling point at atmospheric pressure not higher than the boiling point of a solvent for coating-film formation. See (1) in Claim 14. In addition, the amount of impurities having a boiling point at atmospheric pressure of not more than the boiling point of the solvents for coating-film formation is 1 mass% or less of the resist polymer in the purified resist polymer solution. See the last three lines of Claim 14.

The rejections of the claims under 35 U.S.C. §103(a) over Sounik et al. in view of Sehm and further in view of Zampini et al. and Breyeta et al. are respectfully traversed. The cited references fail to suggest the claimed process.

Sounik et al. disclose preparing a polymer in a “carboxylic alcohol solvent,” such as methanol, which is then removed in a subsequent “solvent swap” step. See pages 5 and 6.

The Examiner has taken the position that the methanol described in Sounik et al. is equivalent to the solvent having a boiling point at atmospheric pressure not higher than the boiling point of a solvent for coating-film formation specified in Claim 14. See the Office Action at page 3, bottom.

However, in the process Sounik et al., settling of polymer with methanol is conducted, and then a substantial amount of the methanol is decanted. Then, a third solvent for film-coating formation is added thereto, and the remaining methanol is distilled off. On the other hand, in the claimed process, the polymer is dissolved in a solvent having a boiling point at an atmospheric pressure not higher than the boiling point of a solvent for film-coating formation, and then the solvent is evaporated under reduced pressure while adding a solvent for film-coating formation. Thus, the two inventions are not at all similar. Further, Sounik et al. do not mention that the amount of impurities having a boiling point at atmospheric pressure of not more than the boiling point of the solvents for film-coating formation is 1 mass% or less of the resist polymer in the purified resist polymer solution.

Sehm, Zampini et al. and Breyeta et al. all fail to remedy the deficiencies of Sounik et al. discussed above. None of the references in any combination with Sounik et al. suggest dissolving a solid product comprising a resist polymer comprising a repeating unit decomposable by, and becoming alkali-soluble by, the action of an acid and a polar group-containing repeating unit, in a solvent having a boiling point at atmospheric pressure not higher than the boiling point of a solvent for coating-film formation and where the amount of

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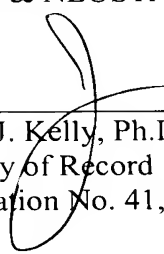
impurities having a boiling point at atmospheric pressure of not more than the boiling point of the solvents for coating-film formation is 1 mass% or less of the resist polymer in the purified resist polymer solution, as specified in Claim 14.

In view of the foregoing, the claimed process is not obvious over the combination of Sounik et al., Sehm, Zampini et al. and Breyeta et al. Accordingly, withdrawal of these grounds of rejection is respectfully requested.

Applicants submit that the present application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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